

Alarm management: fix the alarm system before adding AI

Alarm floods are solved with an alarm philosophy first, not a model. AI works better on an orderly alarm list.

In short

- An alarm should announce a condition that needs operator action, and an alarm that cannot be acted on or always clears itself is noise.
- Measure alarm counts per shift and per operator, the most frequent alarms and how long each stays active before making any change.
- For every alarm, the cause, expected operator action, response time and consequence should be written, and a model's suggestion does not replace that accountability.

01 / The job of an alarm

An alarm should announce a condition that needs an operator action. An alarm that cannot be acted on, has an unclear consequence or always clears itself is noise. The alarm management lifecycle typically covers philosophy, identification, rationalization, detailed design, implementation, operation, monitoring and management of change.

02 / Measure first

Extract alarm counts per shift and per operator, the most frequent alarms and how long each stays active. If a small group of alarms makes up most of the total, inspect those first. These measurements are the baseline against which you compare any model's improvement.

03 / Rationalization

For every alarm, write the cause, the expected operator action, the response time and the consequence. Remove an alarm with no action or turn it into an event record. Do this with the engineer who owns the alarm system; a model's suggestion does not replace that accountability.

04 / Where AI fits

A model can help group alarms, show related events or suggest leading indicators. Changing priority or safety-related alarms, however, requires an authorized management-of-change process. This guide is a suggested workflow; the applicable standard and settings depend on the plant's risk assessment.

Try it

Rank the ten most frequent alarms in a month of alarm records and write the expected operator action for each.

References and online guide

[Open the online guide](#)

ISA: standards

Proposed pilot steps do not claim field accuracy. Synthetic examples are not measurements from a production site.